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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,872	08/27/2003	David M. Avery	PHB 34,372A	4908

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EXAMINER
SHIMIZU, MATSUICHIRO

ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,872	AVERY, DAVID M.	
	Examiner	Art Unit	
	Matsuichiro Shimizu	2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Terminal Disclaimer

The applicant filed terminal disclaimer on 2/1/06, and it was accepted and approved by the Office on 2/5/06.

Response to Arguments

Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new grounds of rejection provided by new prior art of Hughes.

The examiner withdraws allowance to claims 27-28 in view of the new grounds of rejection.

Therefore, rejection of claims 11-28 follows:

Claim Rejections - 35 USC § 112

The following is a quotation of the *second* paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. "operating the central to compute" cited in claim 23 is not clear. Therefore, the examiner is prosecuting the claim 23 cited as "operating the central station to compute".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes et al. (5,920,261) in view of Shober (5,952,922).

Regarding **claims 11 and 19**, Hughes teaches a radio system, comprising:

a plurality of spatially separate radio units (Fig. 1, locating receiver 10) identifiable by a set of radio unit identifications;

a central transmitter (Fig. 1, a central transmitter 6);

a central station (Fig. 1, computer 4 coupled with location processor 10);

a transponding station (Fig. 1, tags 4) identifiable by a transponding station identification;

wherein, when said central station (Fig. 1, computer 4 coupled with location processor 10) is required to determine a location (col. 10, line 60 to col. 11, line 10, 3D-location of tag 14) of said transponding station, said central station transmits an enquiry signal to said interrogating station (Fig. 1, central transmitter 6), said enquiry signal (col. 6, lines 23-27, the central processor routinely contact each tag by tag ID via central transmitter 6 (Fig. 1)) including said transponding station identification; and

wherein said interrogating station (rebroadcasts the enquiry signal to said transponding station and transmits individual wake-up messages (Fig. 1 and 12b, coputer sends wake-up signal to locating receivers 10) to said radio units,

each wake-up message including a corresponding radio unit identification (col. 10, lines 18-30, ids associated with location receivers are parameters for determining transponder location). But Hughes is silent on an interrogating station.

However, Shober discloses, in the art of locating system, an interrogating station (Fig. 1, interrogator 103) for the purpose of providing large communication coverage area to locate the transponder.

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include interrogating stations in the device of Hughes as evidenced by Shober because such would provide wider communication between the central station and transponder in place of a central transmitter, thus enlarging transponder search area.

Regarding **claims 18 and 26**, Shober continues, as claimed in claims 11 and 19, to teach the radio system,

wherein said transponding station is adapted to receive the enquiry signal at a first frequency (col. 5, lines 55-57, transponder receives downlink frequency of 2.5 GHz) and to transmit the relay signal at a second frequency (col. 7, lines 45-49 and col. 8, lines 6-21, a single sub-carrier tone of 32 KHz (col. 6, lines 19-22), sub-carrier frequency 308).

Regarding **claim 12**, Hughes teaches the radio system of claim 11, wherein, in response to hearing the transponding station identity in the enquiry signal, said transponding station (Fig. 1, tag 14 transmits to locating receiver 10)

transmits a reply signal to said radio units (Fig. Locating receivers 10), the reply signal including the transponding station identification.

Regarding claim 20, Hughes teaches the method of claim 19, further comprising:

transmitting a reply signal from the transponding station (Fig. 1, tag 14 transmits to locating receiver 10) to the radio units in response to the transponding station hearing the transponding station identitfication in the enquiry signal and the radio units receiving the wakeup messages (Fig. 12b, computer sends wake-up signal to location receiver 10), the reply signal including the transponding station identity (Fig. 1, tags 4 identifiable by a transponding station identification).

Regarding claim 13, Shober continues, as claimed in claims 12, to teach the radio system, wherein in response to receiving the wake-up messages (Fig. 12b, coputer sends wake-up signal to location receiver) and the reply signal, each radio unit identifies said transponding station from the reply signal and determines a received signal strength (col. 9, lines 30-35, signal strength) of the reply signal.

Regarding claim 14, Hughes continues, as claimed in claim 13, to teach the radio system,

wherein said radio units and said interrogating station relay the transponding station identification and the determined received signal strengths of the relay

signal together with the set of radio unit identifications to said central station (col. 10, line 60 to col. 11, line 10, 3D-location of tag 14 associated with receiver location 10 with IDs and transponder ID).

Regarding claim 15, Shober continues, as claimed in claim 14, to teach the radio system,

wherein said central station computes a location of said transponding station relative to the location of each radio unit based on the determined received signal

strengths of the relay signal (col. 9, lines 30-35, signal strength), the set of radio unit identifications and the transponding station identification.

Regarding claim 21, Shober continues, as claimed in claim 20, to teach further comprising:

operating each radio unit to identify the transponding station from the reply signal and to determine a received signal strength (col. 9, lines 30-35, signal strength) of the reply signal in response to receiving the reply signal.

Regarding claim 22, Hughes continues, as claimed in claim 21, to teach, further comprising:

relaying the transponding station identification and the determined received signal strengths of the relay signal together with a set of radio unit identifications from the radio units and the interrogating station to the central station (col. 10, line 60 to col. 11, line 10, 3D-location of tag 14 determined

with parameters from receiver locations 10 with IDs and transponder or tag ID 14).

Regarding claim 23, Hughes continues, as claimed in claim 22, to teach, further comprising:

operating the central station (Fig. 1, computer 4 coupled with location processor 10) to compute the location of the transponding station relative to the location of each radio unit based on the transponding station identification and

the determined received signal strengths (col. 9, lines 30-35, signal strength) of the relay signal together with the set of radio unit identifications (col. 10, line 60 to col. 11, line 10, 3D-location of tag 14 determined with parameters from receiver locations 10 with IDs and transponder or tag ID 14).

All subject matters in claim 27 are discussed above with regards to claims 11 and 13, and therefore rejection of the subject matters expressed in claim 27 are met by references and associated arguments applied to rejection of claims 11 and 13.

All subject matters in claim 28 are discussed above with regards to claim 15, and therefore rejection of the subject matters expressed in claim 28 are met by references and associated arguments applied to rejection of claim 15.

Regarding claims 16 and 24, Shober continues, as disclosed in claims 11 and 19, wherein said transponding station transmits the reply signal at a first frequency (col. 4, lines 48-65, reply signal at a first frequency, carrier

frequency) corresponding substantially to a secondary frequency to which said radio units are tuned (col. 4, lines 48-65, radio units tuned to receive a second frequency transitioning between two frequencies in FSK fashion).

Regarding claims 17 and 25, Shober continues, as disclosed in claims 11 and 19, to teach said transponding station receives and transmits on a first frequency (col. 4, lines 48-65, reply signal at a first frequency, carrier frequency); and said radio units and said interrogating station include frequency changing means (Fig. 2, col. 4, line 66 to col. 5, line 22, receiver associated with interrogator and radio units has changing means for changing receive frequency to the first frequency to frequency source 201 to be received at mixer 208) for changing at least their receive frequencies to the first frequency.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matsuichiro Shimizu whose telephone number is 571-272-3066. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber, can be reached on 571-272-7308. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3068.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703-305-8576).

Matuichiro Shimizu
April 26, 2006

WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
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